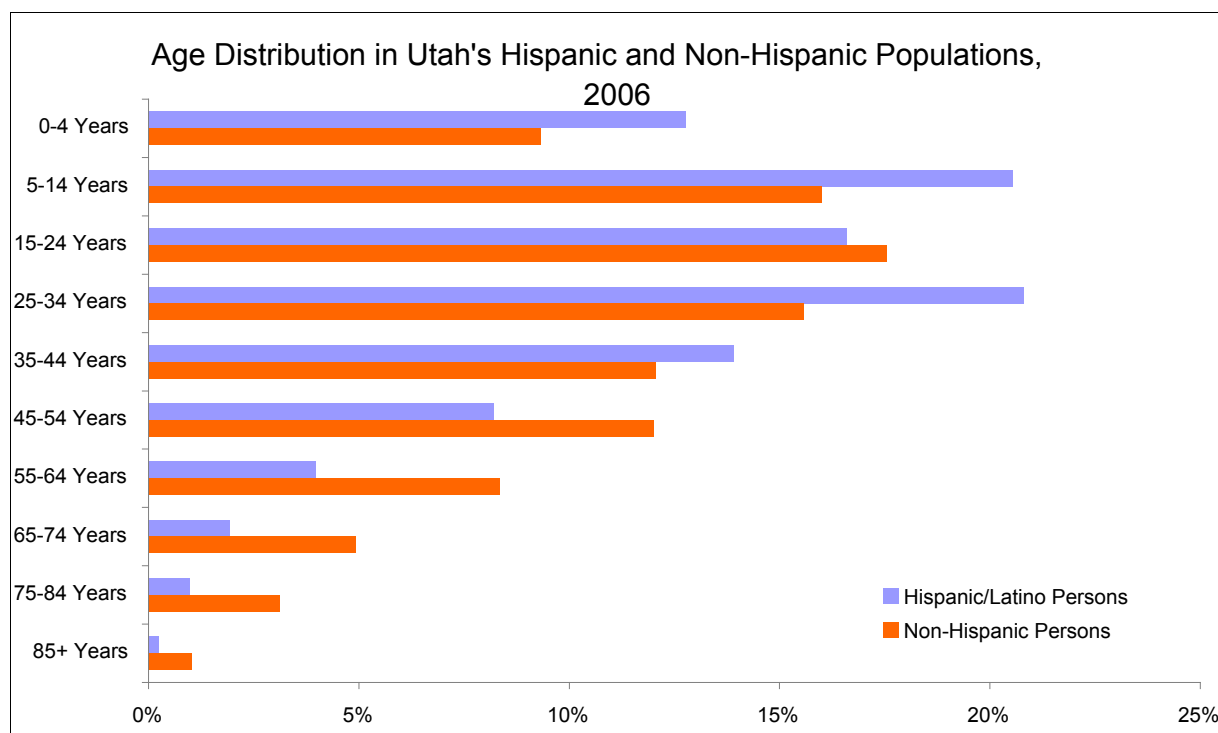


Appendix E: Age-adjusted Rates

In [Appendix D](#), rates were calculated for coronary heart disease deaths by race and ethnicity. The rates that were calculated are known as “crude” rates because they have not been adjusted in any way. However, a crude rate can be misleading when comparing populations that differ in age because the crude rate for most causes of death will be higher in populations with a larger proportion of elderly individuals. For example, Utah’s Hispanic/Latino population is younger than the non-Hispanic or Latino population—it has higher proportions of young persons and lower proportions of elderly persons. See the table and figure below.

Age Distributions for Utah’s Hispanic/Latino and Non-Hispanic Populations

	Population Counts		Percentage Distributions	
	<i>Hispanics/ Latinos</i>	<i>Non- Hispanics</i>	<i>Hispanics/ Latinos</i>	<i>Non- Hispanics</i>
0-4 Years	37,621	216,646	12.8%	9.3%
5-14 Years	60,493	371,459	20.5%	16.0%
15-24 Years	48,886	407,579	16.6%	17.6%
25-34 Years	61,328	361,376	20.8%	15.6%
35-44 Years	41,002	279,715	13.9%	12.1%
45-54 Years	24,190	278,493	8.2%	12.0%
55-64 Years	11,754	194,097	4.0%	8.4%
65-74 Years	5,663	114,217	1.9%	4.9%
75-84 Years	2,868	72,748	1.0%	3.1%
85+ Years	746	24,248	0.3%	1.0%
	294,552	2,320,577	100.0%	100.0%





Appendix E: Age-adjusted Rates

The following table presents lung cancer incidence rates for Hispanic/Latino and non-Hispanic persons. The age-specific incidence rates increase with increasing age for both ethnic groups. The crude rate is lower in the Hispanic/Latino group because there was a smaller proportion of older persons than in the non-Hispanic group.

Lung Cancer: Age-specific and Crude Incidence Rates per 100,000 Persons, 2000-2006

Age-specific Rates	<i>Hispanics/ Latinos</i>	<i>Non- Hispanics</i>
0-4 Years	0	*
5-14 Years	0	0
15-24 Years	0	*
25-34 Years	*	0.8
35-44 Years	*	4.5
45-54 Years	7.0	16.6
55-64 Years	57.9	64.0
65-74 Years	167.4	159.6
75-84 Years	224.9	189.1
85+ Years	164.2	121.7
<i>Crude Rate, All Ages</i>	<i>8.8</i>	<i>22.7</i>

* Due to a low frequency, these rates are unstable and have been suppressed.

This report presents data on racial and ethnic disparities. Disparities are differences, or comparisons, between at least two different population groups. To make sure the differences are really due to health status and risk, and not merely due to the age differences between the two populations, we adjust the data to find out what the rates would be if each population group compared had exactly the same age distribution. The “age-adjusted” rate applies the same population age distribution to the age-specific rates from both populations. The convention currently used in public health for doing this is the year 2000 U.S. population estimates.

	<i>U.S. 2000 Standard Population</i>	<i>Hispanics/ Latinos</i>	<i>Non- Hispanics</i>
0-4 Years	6.9135%	0	*
5-14 Years	14.5565%	0	0
15-24 Years	13.8646%	0	*
25-34 Years	13.5573%	*	0.8
35-44 Years	16.2613%	*	4.5
45-54 Years	13.4834%	7.0	16.6
55-64 Years	8.7247%	57.9	64.0
65-74 Years	6.6037%	167.4	159.6
75-84 Years	4.4842%	224.9	189.1
85+ Years	1.5508%	164.2	121.7
<i>Age-adjusted Rate</i>		<i>30.5</i>	<i>29.7</i>

* Due to a low frequency, these rates are unstable and have been suppressed.

Appendix E: Age-adjusted Rates

The age-adjusted lung cancer rates by ethnicity are virtually identical for Hispanics/Latinos and non-Hispanics.

Age-adjusted rates will vary depending on the age-adjustment categories chosen by the data analyst. The Utah Cancer Registry used the 10 age categories described in this example. The Behavioral Risk Factor Surveillance System used the categories 18-34, 35-49 and 50 and older. Most other UDOH data sets used the following categories for this report: 44 years and younger, 45-64 years, and 65 years and older.

Most data tables in this report include three indications of the size of the problem: the number of events, the crude rate, and the age-adjusted rate. Which one should be used? It depends on what question is asked.

Question: How many people died?

Measure: Number of events

Question: What is the underlying risk in my population?

Measure: Crude rate

Question: Is there a health status disparity between groups?

Measure: Age-adjusted rates

Crude rates estimate the proportion of the population that has a health problem. Health department staff use **age-adjusted rates** to determine racial and ethnic disparities. Age-adjusted rates answer the hypothetical question, “If this group had the same age distribution as the entire United States population in the year 2000, what would its rate be?” They do not estimate the actual rates of disease in the population.